REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-12 and 26 are presently active; Claims 13-25 and 27 have been withdrawn from consideration.

In the outstanding Office Action, Claims 1, 3-8, and 26 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Katakabe et al (U.S. Pat. No. 6,745,784) in view of Oh (U.S. Pat. No. 6,751,824). Claims 2 and 9-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Katakabe et al and Oh in view of Mandal et al (U.S. Pat. No. 6,770,424).

Claim 1 defines a rinse solution nozzle assembly includes a first nozzle array including at least one nozzle, having a central axis disposed over a center of the substrate, and configured to dispense the rinse solution substantially near a center of the substrate, a first control valve coupled to the first nozzle array and configured to actuate a first flow rate of the rinse solution through the first nozzle array, a second nozzle array including a plurality of nozzles and configured to dispense the rinse solution across a radial span of the substrate on a side of the substrate facing the first nozzle array, and a second control valve coupled to the second nozzle array and configured to actuate a second flow rate of the rinse solution through the second nozzle array. As such, Claim 1 defines that the ***same*** rinse solution is dispensed by the first and second nozzle array through first and second flow control valves on the ***same*** side of the substrate with the first flow rate being dispensed substantially near a center of the substrate and the second flow rate being dispensed through a plurality of nozzles.

Regarding the deficiencies in Katakabe et al, the outstanding Office Action asserts that Katakabe et al teach a plurality of nozzles for element 26. Applicant respectfully points

out that the "plurality of nozzles" teaching in Katakabe et al is directed to nozzle 14 (the front side center nozzle) and nozzle 18 (the back side center nozzle), is not direct to nozzle 26. Nozzle 26 in Katakabe et al is "an edge nozzle" positioned above a periphery of the substrate. One of ordinary skill in the art would not see from the teachings in Katakabe et al any reason for making edge nozzle 26 a plurality of nozzles when FIGs. 2-4 of Katakabe et al disclose mechanisms for moving and directing spray from the edge nozzle across a wafer. Thus, Katakabe et al do not disclose a plurality of nozzles for nozzle 26, as asserted in the Office Action, and there is no suggestion or motivation in Katakabe et al for converting nozzle 26 into a plurality of nozzles.

Furthermore, regarding Katakabe et al, the outstanding Office Action asserts that "valves are well known in the art and Katakabe disclose stopping and controlling the various fluid applications (see entire document and col. 8, ll. 36-31)." However, Katakabe et al at col. 8, ll. 38-45 disclose that:

> The substrate W is then rinsed with deionized water supplied from one or more fixed nozzles (not shown) ***provided at an inner surface of the cover 21***. Alternatively, the substrate W may be rinsed with deionized water supplied ***from the center nozzle 24*** and ***the back nozzle 28***. In this case, the chemical solution supplied from the center nozzle 24 and the back nozzle 28 should be changed to deionized water. Thereafter, the substrate W is spin-dried, whereupon the cleaning of the substrate W is completed. [emphasis added]

Thus, in this section of Katakabe et al, Katakabe et al disclose two substrate rinsing configurations (1) the dispensing of deionized water from fixed nozzles provided at an inner surface of the cover 21, and (2) the dispensing of deionized water from the center nozzle 24 and the back nozzle 28.

In the first example, deionized water is dispensed from fixed nozzles provided at an inner surface of the cover 21. Katakabe et al's disclosure of dispensing of deionized water from fixed nozzles provided at an inner surface of the cover 21 ***teaches away*** from the recited first nozzle array having a central axis disposed over a center of the substrate and configured to

dispense the rinse solution substantially near the center of the substrate, as dispensing water from cover 21 does not dispense the rinse solution substantially near the center of the substrate.

In the second example, deionized water is dispensed from the center nozzle 24 onto the ***front side*** of wafer W and deionized water is dispensed from the back nozzle 28 onto the ***back side*** of wafer W. Hence, Katakabe et al's disclosure of the dispensing of deionized water from the center nozzle 24 and the back nozzle 28 ***teaches away*** from the above-noted feature defined by Claim 1 regarding the dispensing of the rinse solution onto the same side of the substrate.

For all these reasons, Katakabe et al do not disclose or suggest the claimed invention. Hence, Katakabe et al is insufficient to anticipate or make obvious the claimed invention. Indeed, for other reasons, the Office Action acknowledges that Katakabe et al do not disclose "valves in connection with the fluid supplies." For such a teaching the Office Action relies on Oh.

Regarding the deficiencies in Oh, the "valve" teaching in Oh that the Office Action relies on is a ***singular valve*** that cuts off or on a supply of water to injectors 4a and 4b. As such, Oh does not provide a teaching of ***a first control valve*** configured to actuate a first flow rate of the rinse solution through the first nozzle array and ***a second control valve*** configured to actuate a second flow rate of the rinse solution through the second nozzle array.

Hence, a combination of Katakabe et al and Oh would not produce the claimed invention.

Furthermore, the outstanding Office Action asserts that one of ordinary skill in the art would immediately foresee the necessity of valves to properly operate the rinsing assembly, and relies on Oh for showing valves in connection with the water supply and nozzle. However, without Applicant's disclosure, one of ordinary skill in the art would not know how to

"properly operate the rinsing assembly" – – i.e. how to construct and operate the claimed rinsing assembly.

In re Rouffet, 149 F.3d 1350, 1347, 47 USPQ2d 453, 1458 (Fed. Cir. 1998) sets forth criteria for being certain that impermissible hindsight is not being used to deprecate an invention.

> To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must ***show reasons*** that the skilled artisan, confronted with the same problems as the inventor and ***with no knowledge of the claimed invention***, would select the elements from the cited prior art references for combination in the manner claimed.
>
> This court has identified three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. In this case, the Board relied upon none of these. Rather, just as it relied on the high level of skill in the art to overcome the differences between the claimed invention and the selected elements in the references, it relied upon the high level of skill in the art to provide the necessary motivation. The Board did not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. ***Instead, the Board merely invoked the high level of skill in the field of art.*** If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness. [emphasis added]

In the present case, the Office Action has failed to show reasons why the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. Instead, the Office Action's assertion that one of ordinary skill in the art would know how to "properly operate the rinsing assembly" is a statement that merely (and impermissibly) invokes the high level of skill in the field of art and can only be seen as

improperly based on knowledge of the claimed invention in order for any combination of the elements in Katakabe et al and Oh to meet each and every element of the present invention.

Indeed, Applicant respectfully submits that to meet produce the claimed invention the combination of Katakabe et al and Oh would have to (1) modify the singular edge nozzle in Katakabe et al to make a plurality of nozzles, (2) reconfigure the fluid dispensers in Katakabe et al to deliver the same rinse solution to for example the front side of the substrate, and (3) modify the singular flow controller in Oh to provide two flow controllers for delivering the same solution to the same side of the wafer at the recited first and second flow rates.

Such modifications and reconfigurations could only be seen as impermissible hindsight reconstruction.

Hence, Claim 1 and the claims dependent therefrom are believed to patentably define over Katakabe et al and Oh.

Conclusion:

For all these reasons, it is respectfully requested that the present rejection be withdrawn and this case passed to allowance.

Consequently, in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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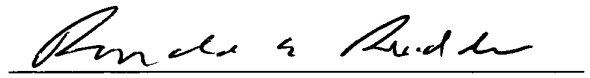

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